

Mission Summary

990911H Hurricane Floyd

Synoptic Surveillance Mission

Scientific Crew (42RF)

Chief Scientist	Michael Black
GPS Dropsonde	P. Dodge/Bob Black
Workstation/Radar	Peter Dodge
Step Frequency (SFMR)	Jim Carswell/Eric Uhlhorn

Aircraft Crew (42RF)

Pilots	Taggert, Tennesen
Flight Director	Stan Czyzyk
Navigators	Newman
Systems Engineer	Jim Roles/Sean McMillan
AVAPS Operator	Jorge Gonzales

Mission Briefing:

An NHC-tasks, two-aircraft synoptic surveillance mission (N42RF and N43RF) was planned for 11 September 1999. N43RF would depart from MacDill AFB at 1730 UTC and fly to the east covering the northwest areas of Hurricane Floyd, cross through Floyd's eye north of Puerto Rico, and return to Miami on a reverse leg 3° further north than the outbound one. Meanwhile for this mission, N42RF, would also takeoff from MacDill at 1730 UTC flying an outbound leg to the NE, head to the SW towards a closest approach of about 200 km NW of Floyd's center, and finally covering the area north and northeast of the storm before recovering in Bermuda. Each aircraft was to release 14 dropsondes along the track with additional eye and eyewall drops possible for during the eye crossing by N43RF. Floyd was forecast to be a 100 kt hurricane located at 23° N 63.5° W or about 400 km NE of San Juan, Puerto Rico. Figure 1 shows the tracks of both WP-3D aircraft.

Mission Synopsis:

Takeoff from Barbados was at 1745 UTC, the first GPS drop was at 1854 UTC, about 400 km east of Jacksonville, FL. At 2010 UTC we were cutting diagonally across a frontal rainband that was oriented from SW to NE. This was an impressive feature on the lower fuselage radar as it was ~800 km long and ~100 km wide. The dropsonde at 2028 UTC was released in the rainband and at 2045 UTC we were exiting the band heading to the southeast. At about 2300 UTC we were at our closest approach to Floyd, ~180 miles to the SW of N42RF. At 2309 UTC, one of our drops was in an outer rainband, northeast of Floyd's eye. We completed our mission by covering the area to the north and northeast of Floyd before landing at Bermuda at 0215 UTC, 12 September.

Evaluation:

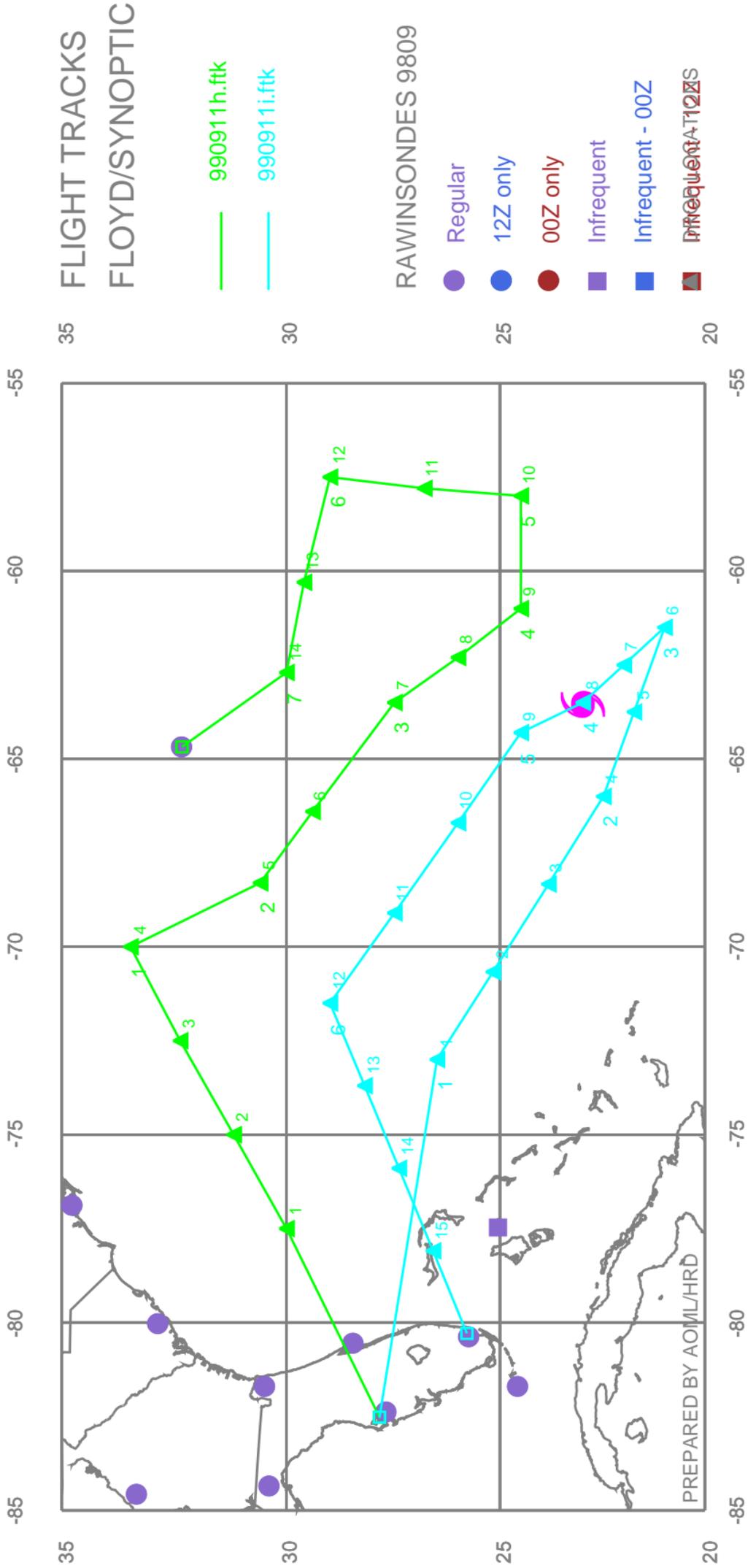
The two aircraft, tasked (NHC) synoptic-surveillance mission provided important information from flight-level and GPS sonde observations in and around the periphery of Floyd. Figures 2,3 and 4 show the synoptic GPS dropsonde observations at 500 mb, 850 mb, and the surface, respectively. The flights were conducted a few days before a potential landfall in the SE United States, including Florida.

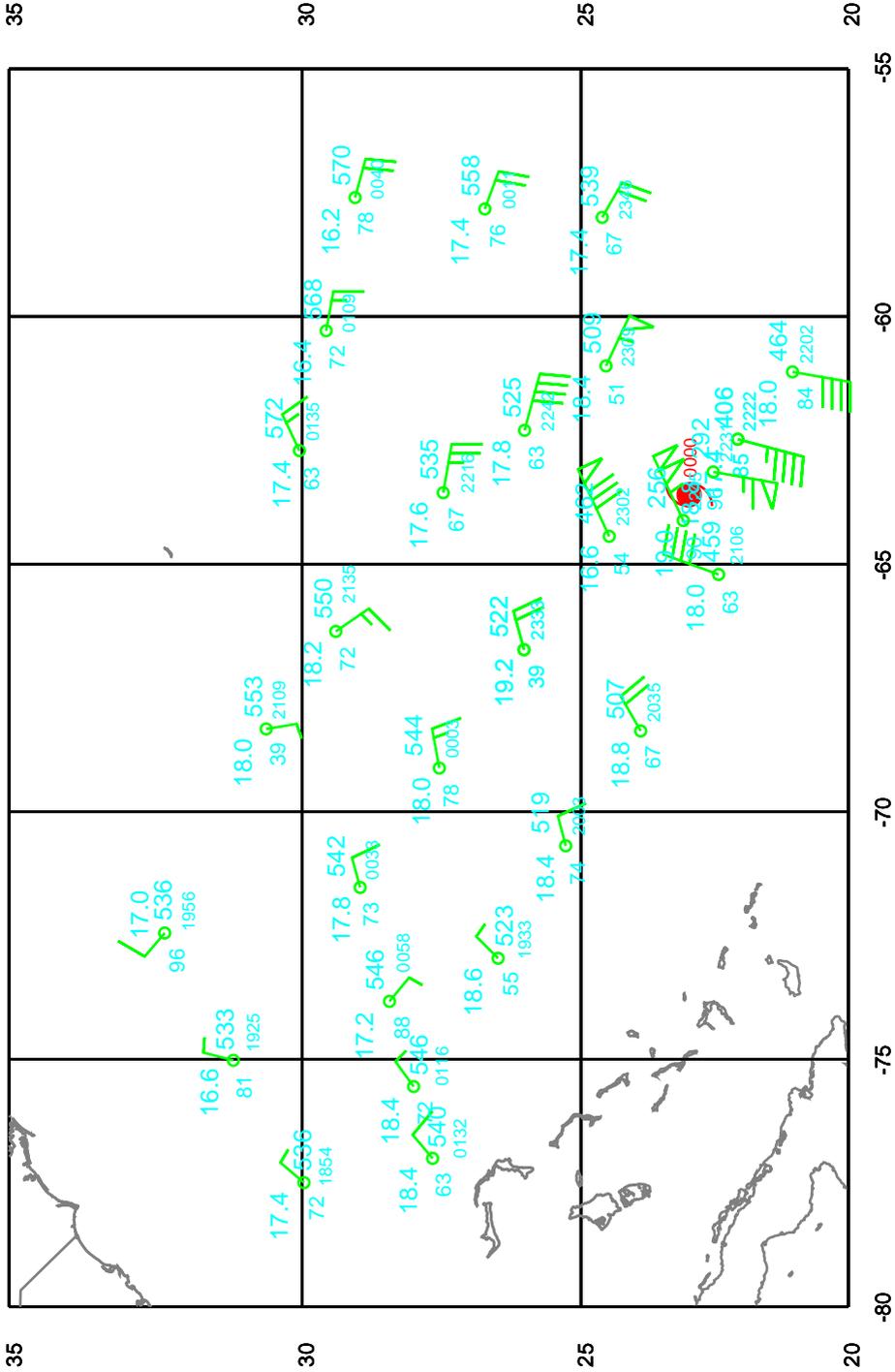
Problems:

N42RF released 19 dropsondes total and transmitted 14 that were dropped at or near the planned points. Five of the sondes had total or partial wind failures, a higher -than-normal failure rate. Otherwise, the rest of the scientific equipment, including the SFMR worked well.

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Figure 1





FLOYD

850 mb

Date: 990911
Time: 18-30 UTC

EARTH RELATIVE

Figure 3

